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# Bibliography

## Propagation and Scattering of Electromagnetic Waves

Compiled by

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BIBLIOGRAPHY

PROPAGATION AND SCATTERING OF  
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Project Director

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## INTRODUCTION

This bibliography was prepared on behalf of the members of a theoretical group working on scattering and propagation of electromagnetic waves. To keep the bibliography within reasonable bounds, while striking at the chief lines of investigation of the group, it was decided to restrict its scope in several ways.

In the first place, only theoretical articles are included, that is, articles in which the conclusions are established by mathematical methods. Among theoretical treatments those employing the methods of classical physics are here given; that is, relativistic, quantum electrodynamic, or statistical approaches have been excluded.

The topics covered are propagation in media (homogeneous and non-homogeneous), reflection and refraction from obstacles, and diffraction around obstacles, as well as some general diffraction studies. A few papers on the propagation of sound known to have bearing on electromagnetic theory have been included. However, no exhaustive study of articles on sound was made.

Articles involving reflection of waves from the ionosphere have, as a whole, been omitted. Also, optical problems treated by methods of geometrical optics as opposed to the electromagnetic wave theory approach, and general papers in mathematics and electromagnetic theory, perhaps containing useful methods but not applied to specific problems, have been omitted.

The chief sources in preparing this bibliography are Mathematical Reviews, Proceedings of the Institute of Radio Engineers, Science Abstract (Section A and B), Experimental Wireless and Wireless Engineer, and the Bibliography of Scientific and Industrial Reports prepared by the Office of Technical Services. The papers listed begin with the year 1920 and close with those which were abstracted in the above sources by the end of July, 1948.

The language of the article has been specified, except in the case of English, French or German.

An effort has been made to make the bibliography complete within the scope set for it, but no doubt some omissions will be discovered. It is hoped, nevertheless, that the bibliography will be helpful to other investigators in the field.



LIST OF ABBREVIATIONS

Alta Frequenza.	Alta Frequenza. Turin.
Annales des P.T.T.	Annales des Postes, Télégraphes et Téléphones. Paris.
Ann. d. Physik.	Annalen der Physik. Leipzig.
Ann. Physique.	Annales de Physique. Paris.
Ann. Télécommun.	Annales des Télécommunication. Paris.
Arch. f. Elektrot.	Archiv für Elektrotechnik. Berlin.
A.T.M.	Archiv für technisches Messen. Munich.
Atti Accad. dei Lincei	Atti della Reale Accademia Nazionale dei Lincei. Rome.
Atti Pont. Accad. Sci. N. Lincei	Atti della Pontificia Accademia della Scienze-I Nuovi Lincei. Atta del Vaticans, Italy.
Beitr. z. angew. Geophys.	Beiträge zur angewandten Geophysik. Leipzig.
Beitr. z. Phys. fr. Atmos.	Beiträge zur Physik der freien Atmosphäre. Leipzig.
Bell System Tech. J.	Bell System Technical Journal. New York.
Bull. Acad. Sci. URSS Sér. Phys. (Izvestion Akad. Nauk. SSSR)	Bulletin de l'Académie des Sciences de l'URSS. Moscow.
Bull. Amer. Met. Soc.	Bulletin of the American Meteorological Society. Easton, Pa.
Bull. Assoc. Ing. El Liège	Bulletin de l'Association des Ingénieurs Électriciens sortis de L'Institut Electro-technique Montefiore. Liège, Belgium.
Bull. Assoc. Suisse Élect.	Bulletin de l'Association Suisse des Électriciens. Zürich.
Bull. de la Soc. belge des Élec.	Bulletin de la Societé Belge des Électriciens. Marcinelle, Belgium.
Cahiers de Physique.	Cahiers de Physique. Paris.
Columb. Univ. Div. of War Research	Columbia University Division of War Research
Columbia Univ. Math. Phys. Group	Columbia University Mathematical Physics Group.
Columbia Univ. Wave Prop. Group	Columbia University Wave Propagation Group.
Compositio Mathematica.	Compositio Mathematica. Groningen.
Congrès International d'Élec.	Congrès International d'Électricité. Paris.
C. R. Acad. Sci. Paris.	Comptes Rendus Hebdomadaire des Séances de l'Académie des Sciences. Paris.





- C. R. (Doklady) Acad. Sci. URSS (N.S.) Comptes Rendus de l'Académie des Sciences de l' URSS, Moscow.
- Curr. Sci. Current Science. Bangalore.
- Die Physik. Die Physik. Leipzig.
- Drukkerij Waltman (A.J.Mulder). Drukkerij Waltman (A.J.Mulder). Delft.
- Elect. Engng. Electrical Engineering. New York.
- Electn. The Electrician. London.
- Elect. Review. Electrical Review. London.
- Electronics. Electronics. New York and London.
- Elektr. Nachr. Techn. (ENT) Elektrische Nachrichten - Technik. Berlin.
- Elek. u. Maschinenbau. Elektrotechnik und Maschinenbau. Vienna.
- Elettrotecnica. L'Elettrotecnica. Milan.
- Engineer. The Engineer. London.
- E. T. J. Electrotechnical Journal. Tokyo.
- E. T. Z. Elektrotechnische Zeitschrift. Berlin.
- Experimental Wireless. Experimental Wireless and the Wireless Engineer. London.
- Fortschritte der Chemie, Physik, und Phys. Chem., Series B. Fortschritte der Chemie, Physik, und Physikalischen Chemie. Leipzig.
- Funkmagazin. Funkmagazin. Berlin.
- Geophys. Geophysics. Austin, Texas.
- Gerlands Beitr. z. Geophys. Gerlands Beiträge zur Geophysik. Leipzig.
- Harvard Univ., Radio Res. Lab. Harvard University Radio Research Laboratory. Cambridge.
- Helv. Phys. Acta. Helvetica Physica Acta. Basle.
- Hochfrequenztech. Elektroak. (formerly Zeits. f. Hochfrequenztechn.) Hochfrequenztechnik und Elektroakustik. Leipzig.
- I.E.N.G.F. Pubblicazioni dell' Istituto Elettrotecnico Nazionale Galileo Ferraris. Milan.
- Indian J. Phys. Indian Journal of Physics and Proceedings of the Indian Association for the Cultivation of Science. Calcutta.
- Ingen. Vidensk. Skr. A. Ingeniorvidenskabelige Skrifter. Copenhagen.
- J. Acous. Soc. Amer. Journal of the Acoustical Society of America. New York.
- Jahrb. d. drahtl. Tele. Jahrbuch der drahtlosen Telegraphie und Telephonie (changed to Zeitschrift für Hochfrequenztechnik.) Berlin.



J. Am. I.E.E.	Journal of the American Institute of Electrical Engineers.
J. Appl. Phys,	Journal of Applied Physics. New York.
Jber. Deutsch. Math. Verein.	Jahresbericht Deutschen Mathematiker Vereinigung. Berlin.
J. Frank. Inst.	Journal of the Franklin Institute of the State of Pennsylvania, Lancaster and Philadelphia, Pa.
J.I.E.E.	Journal of the Institution of Electrical Engineers. London.
J. Opt, Soc. Amer.	Journal of the Optical Society of America. New York.
J. Phys., U.S.S.R.	Journal of Physics. Moscow.
J. Roy. Soc. Arts.	Journal of the Royal Society of Arts. London.
J. Télégraph.	Journal Télégraphique. Bern, Switzerland.
J. Tel. Soc,	Journal of the Television Society. London.
Marconi Rev.	Marconi Review. London
Math. Gaz.	Mathematical Gazette. London
Mem. Accad. d'Italia	Memorie della Reale Accademia d'Italia. Rome.
Mem. Kyoto Coll. Sci.	Memoirs of the College of Science, Kyoto Imperial University. Kyoto, Japan.
Mem. Ryojun Coll. Eng.	Memoirs of the Ryojun College of Engineering. Port Arthur, South Manchuria.
Met. Ann.	Meteorologische Annaler. Oslo.
Meteorolog. Zeits.	Meteorologische Zeitschrift. Berlin and Vienna.
M.I.T. Rad. Lab.	Massachusetts Institute of Technology Radiation Laboratory. Cambridge.
Nature.	Nature. London.
Naval Res. Lab.	Naval Research Laboratory. Washington, D.C.
N.D.R.C.	National Defense Research Committee.
Nippon Elect. Comm. Eng.	Nippon Electrical Communication Engineering. Tokyo.
Nuovo Cim.	Il Nuovo Cimento. Bologna.
Off. Pub. Bd.	Office Publications Board.
Onde Élect.	l'Onde Électrique. Paris.



O.S.R.D.	Office of Scientific Research and Development.
Phil. Mag.	The London, Edinburgh and Dublin Philosophical Magazine and Journal of Science. London.
Philips Res. Rep.	Philips Research Reports. Eindhoven, Holland.
Philips Tech. Rev.	Philips Technical Review. Eindhoven, Holland.
Philos. Trans. Royal Soc.	Philosophical Transactions of the Royal Society of London. London.
Physica.	Physica. The Hague.
Physica, 's Grav.	Physica, 's Gravenhage. The Hague.
Physics.	Physics. New York.
Physik. Ber.	Physikalische Berichte. Braunschweig.
Phys. Rev.	The Physical Review. New York.
Phys. Z.	Physikalische Zeitschrift. Leipzig.
Proc. Cambridge Philos. Soc.	Proceedings of the Cambridge Philosophical Society. London.
Proc. Imp. Acad. Tokyo.	Proceedings of the Imperial Academy of Tokyo. Tokyo.
Proc. Indian Acad. Sci.	Proceedings of the Indian Academy of Sciences. Bangalore.
Proc. Indian Assoc. for Cultivation of Sci.	Proceedings of the Indian Association for the Cultivation of Science. Calcutta.
Proc. I.R.E.	Proceedings of the Institute of Radio Engineers and Waves and Electrons. New York.
Proc. K. Ned. Akad. Wet.	Proceedings of the Koninklijke Nederlandsche Akademie van Wetenschappen. Amsterdam.
Proc. Nat. Ac. Sci.	Proceedings of the National Academy of Sciences. Washington, D. C.
Proc. Nat. Acad. Sci. India	Proceedings of the National Academy of Sciences. Allahabad.
Proc. Phys. Math. Soc. Japan	Proceedings of the Physico-Mathematical Society of Japan. Tokyo.
Proc. Phys. Soc. London.	Proceedings of the Physical Society. London.



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